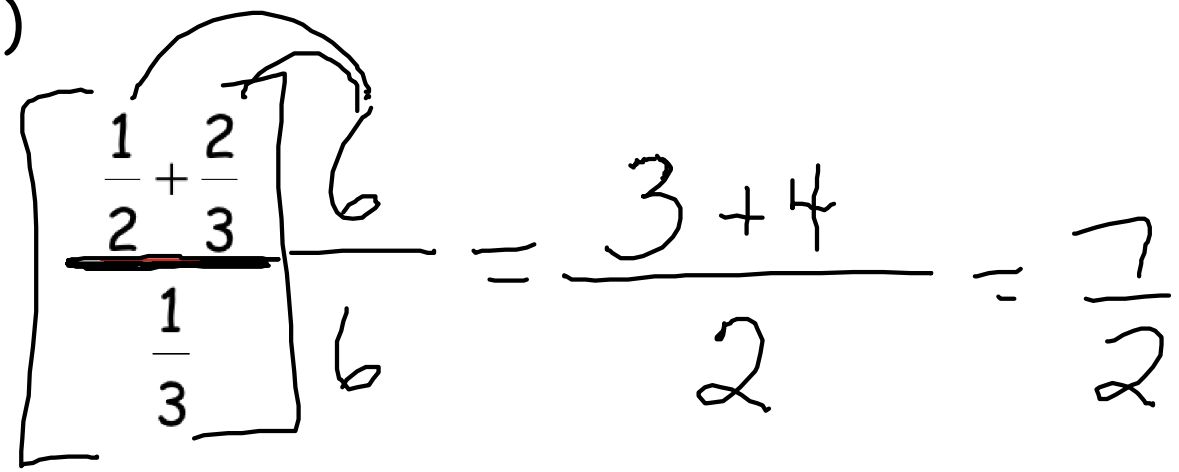
Unit 6
Day 3
Complex Fractions

Def: Complex rational expression- is a rational expression that contains another rational expression in the numerator and/or the denominator

1)

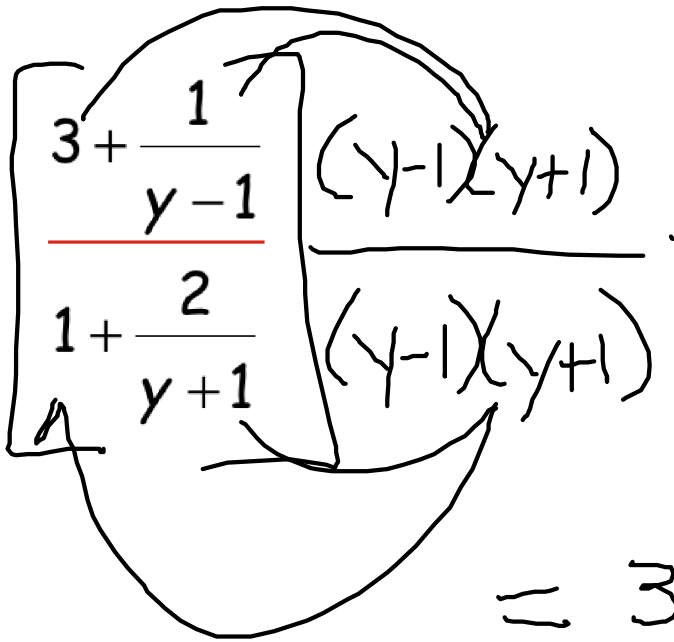


$= \frac{3+4}{2} = \frac{7}{2}$

2) $\dfrac{2-\frac{3}{x}}{1+\frac{1}{2x}} \cdot \dfrac{2x}{2x} = \dfrac{4x-6}{2x+1} = \dfrac{2(2x-3)}{2x+1}$

$2x\left(2-\frac{3}{x}\right) = 2x \cdot 2 - \dfrac{2x \cdot 3}{1} = 4x-6$

3)



$$\frac{3+\frac{1}{y-1}}{1+\frac{2}{y+1}}\cdot\frac{(y-1)(y+1)}{(y-1)(y+1)}=\frac{3(y^2-1)+1(y+1)}{(y-1)(y+1)+2(y-1)}$$

$$=\frac{3y^2-3+y+1}{y^2-1+2y-2}$$

$$=\frac{3y^2+y-2}{y^2+2y-3}=\frac{(3y-2)(y+1)}{(y+3)(y-1)}$$

4)

$$\frac{\frac{5}{x^2+5x+6}-\frac{2}{x+3}}{\frac{x-1}{x^2-9}}=\frac{\frac{5}{(x+3)(x+2)}-\frac{2}{(x+3)}}{\frac{x-1}{(x-3)(x+3)}}\cdot\frac{(x+3)(x-3)(x+2)}{(x+3)(x-3)(x+2)}$$

$$=\frac{5(x-3)-2(x^2-x-6)}{(x-1)(x+2)}=\frac{5x-15-2x^2+2x+12}{x^2+x-2}$$

$$=\frac{-2x^2+7x-3}{x^2+x-2}=\frac{-(2x^2-7x+3)}{(x+2)(x-1)}=\frac{-(2x-1)(x-3)}{(x+2)(x-1)}$$

5)

$$\frac{a^{-1}b+b^{-1}}{(ab)^{-1}} = \frac{\frac{b}{a}+\frac{1}{b}}{\frac{1}{ab}}$$

HOMEWORK:

P. 62: 77-82 (ALL)
WORKSHEET: 2-36 (EVEN)